

- B<sub>1</sub>*
1. (Twice amended) A method for simultaneous screening for one or more gene insertion mutants in a population of any organism comprising:  
preparing an insertion element mutant library comprising a plurality of nucleic acid insertion elements and insertion element flanking sequences, said insertion element flanking sequences originating from a defined population of an organism wherein said gene insertion mutants are to be detected;  
amplifying said insertion element flanking sequences from said insertion element mutant library using at least one primer derived from a sequence of a nucleic acid insertion element of said plurality of nucleic acid insertion elements; and  
fixing a set of nucleic acid amplification products representing said insertion element flanking sequences derived from said insertion element mutant library to a solid support as target for hybridization.
2. (Twice amended) The method according to claim 1 wherein the set of nucleic acid amplification products representing said insertion element flanking sequences are obtained by iPCR using at least one primer or a set of primers based on a sequence of at least one nucleic acid insertion element.

- B<sub>2</sub>*
4. (Twice amended) The method according to claim 3 further comprising reamplifying said at least one amplifiable genomic fragment using at least one primer based on a sequence of [an]a nucleic acid insertion element of said plurality of nucleic acid insertion elements.

- B<sub>3</sub>*
16. (Amended) The kit according to claim 14 wherein the set of amplified insertion flanking sequences is present in a state selected from a group consisting of a soluble state and a dried state.

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18. (Amended) A method for simultaneous screening for one or more gene insertion mutants in a cell line comprising:  
preparing an insertion element mutant library comprising a plurality of nucleic acid insertion elements and insertion element flanking sequences, said insertion element flanking

sequences originating from a cell line wherein said gene insertion mutants are to be detected;  
amplifying said insertion element flanking sequences from said insertion element mutant library  
using at least one primer derived from a sequence of a nucleic acid insertion element of said  
plurality of nucleic acid insertion elements; and  
fixing a set of nucleic acid amplification products representing said insertion element flanking  
sequences derived from said insertion element mutant library to a solid support as target for  
hybridization.

Sub 4 19. (Amended) A method for simultaneous screening for one or more gene insertion  
mutants in a population of any organism comprising:

preparing an insertion element mutant library comprising a plurality of nucleic acid insertion  
elements and insertion element flanking sequences, said insertion element flanking  
sequences originating from a defined population of an organism wherein said gene insertion  
mutants are to be detected;

amplifying said insertion element flanking sequences from said insertion element mutant library  
using at least one primer derived from a sequence of a nucleic acid insertion element of said  
plurality of nucleic acid insertion elements; and

producing a set of labelled amplification products representing said insertion element flanking  
sequences derived from said insertion element mutant library to use as probes to hybridize  
to a solid support to which one or more nucleic acids have been fixed as target(s) for  
hybridisation.

20. (Amended) The method according to claim 2 wherein said iPCR comprises:  
digesting nucleic acid sequences of said insertion element mutant library with at least one restriction  
enzyme which optionally recognizes motifs of four nucleotides in genomic DNA, resulting  
in a collection of amplifiable genomic fragments;  
ligating at least one amplifiable genomic fragment by self ligation; and  
amplifying said at least one amplifiable genomic fragment using a primer based on a terminal part  
of an insertion element.